SECTION 01 57 19
TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

This section includes:

1. Prevention of erosion due to construction activities.
2. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
3. Restoration of areas eroded due to insufficient preventive measures.
4. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.2 QUALITY CONTROL

A. Furnish each material from single source throughout the Work.

B. Perform Work in accordance with referenced permits, including, but not limited to required inspections.

C. Perform Work in accordance with PADEP standards.

1.3 REFERENCES

A. Pennsylvania Department of Environmental Protection (PADEP)
Document No. 363-2134-008 – Erosion and Sediment Pollution Control Program Manual (March 2012).

B. Pennsylvania Department of Transportation (PennDOT)
Publication 408 – Specifications, edition current at time of bid opening.

C. Permits:
Erosion and Sediment Pollution Control (E&S): Related details and drawings included in project Drawings. Narrative included in specifications. Contractor to keep copy of E&S Plan and Narrative on site.

D. ASTM International:
ASTM C127 - Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
ASTM D6938 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.4 SUBMITTALS

A. In accordance with Section, 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Product Data: Submit data for compost filter socks, erosion control blankets, silt fence, temporary seed, mulch, inlet sediment control devices, and pumped water filter bags.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 PROTECTION OF ENVIRONMENTAL RESOURCES

A. Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract. Confine activities to areas defined by the specifications and drawings.

B. Protection of Land Resources: Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the COR. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.

1. Work Area Limits: Prior to any construction, mark the areas that require work to be performed under this contract. Mark or fence isolated areas within the general work area that are to be saved and protected. Protect monuments, works of art, and markers before construction operations begin. Convey to all personnel the purpose of marking and protecting all necessary objects.
2. Protection of Landscape: Protect trees, shrubs, vines, grasses, land forms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using any other approved techniques.
   a. Box and protect from damage existing trees and shrubs to remain on the construction site.
   b. Immediately repair all damage to existing trees and shrubs by trimming, cleaning, and painting with antiseptic tree paint.
   c. Do not store building materials or perform construction activities closer to existing trees or shrubs than the farthest extension of their limbs.
3. Reduction of Exposure of Unprotected Erodible Soils: Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Clear areas in reasonably sized increments only as needed to use. Form earthwork to final grade as shown. Immediately protect side slopes and back slopes upon completion of rough grading.

4. Temporary Protection of Disturbed Areas: Construct diversion ditches, benches, and berms to retard and divert runoff from the construction site to protected drainage areas approved under paragraph 208 of the Clean Water Act.
5. Erosion and Sedimentation Control Devices: The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's activities. Construct or install all temporary and permanent erosion and sedimentation control features shown on the Erosion and Sediment Pollution Control Plan. Maintain temporary erosion and sediment control measures until permanent drainage and erosion control facilities are completed and operative.
6. Manage borrow areas on and off Government property to minimize erosion and to prevent sediment from entering nearby water courses or lakes.
7. Manage and control spoil areas on and off Government property to limit spoil to areas shown and prevent erosion of soil or sediment from entering nearby water courses or lakes.
8. Protect adjacent areas from despoilment by temporary excavations and embankments.
9. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule. Transport all solid waste off Government property and dispose of waste in compliance with Federal, State, and local requirements.
10. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.
11. Handle discarded materials other than those included in the solid waste category as directed by the COR.

C. Protection of Water Resources: Keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters and sewer systems. Implement management techniques to control water pollution by the listed construction activities that are included in this contract.
   1. Washing and Curing Water: Do not allow wastewater directly derived from construction activities to enter water areas. Collect and place wastewater in retention ponds allowing the suspended material to settle, the pollutants to separate, or the water to evaporate.

D. Protection of Fish and Wildlife Resources: Keep construction activities under surveillance, management, and control to minimize interference with, disturbance of, or damage to fish and wildlife. Prior to beginning construction operations, list species that require specific attention along with measures for their protection.

E. Protection of Air Resources: Keep construction activities under surveillance, management, and control to minimize pollution of air resources. Burning is not permitted on the job site. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State of // insert Name of State and title of State Air Pollution Statue, Rule, or Regulation // and Federal emission and performance laws and standards. Maintain ambient air quality standards set by the Environmental Protection Agency, for those construction operations and activities specified.

1. Particulates: Control dust particles, aerosols, and gaseous by-products from all construction activities, processing, and preparation of materials (such as from asphaltic batch plants) at all times, including weekends, holidays, and hours when work is not in progress.
2. Particulates Control: Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause a hazard or a nuisance. Sprinklering, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods are permitted to control particulates in the work area.
3. Hydrocarbons and Carbon Monoxide: Control monoxide emissions from equipment to Federal and State allowable limits.
4. Odors: Control odors of construction activities and prevent obnoxious odors from occurring.

F. Reduction of Noise: Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the COR. Maintain noise-produced work at or below the decibel levels and within the time periods specified.

1. Perform construction activities involving repetitive, high-level impact noise only between 8:00 //___//a.m. and 6:00//____//p.m unless otherwise permitted by local ordinance or the COR. Repetitive impact noise on the property shall not exceed the following dB limitations:

Time Duration of Impact Noise	Sound Level in dB
More than 12 minutes in any hour	70
Less than 30 seconds of any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

SPEC WRITER NOTE: Insert additional information as needed when unique to a particular VA Medical Center site.

2. Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this contract, consisting of, but not limited to, the following:
   a. Maintain maximum permissible construction equipment noise levels at 15 m (50 feet) (dBA):

EARTHMOVING		MATERIALS HANDLING	
FRONT LOADERS	75	CONCRETE MIXERS	75
BACKHOES	75	CONCRETE PUMPS	75
DOZERS	75	CRANES	75
TRACTORS	75	DERRICKS IMPACT	75
SCAPERS	80	PILE DRIVERS	95
GRADERS	75	JACK HAMMERS	75
TRUCKS	75	ROCK DRILLS	80
PAVERS, STATIONARY	80	PNEUMATIC TOOLS	80
PUMPS	75	BLASTING	//--//
GENERATORS	75	SAWS	75
COMPRESSORS	75	VIBRATORS	75

   b. Use shields or other physical barriers to restrict noise transmission.
   c. Provide soundproof housings or enclosures for noise-producing machinery.
   d. Use efficient silencers on equipment air intakes.
   e. Use efficient intake and exhaust mufflers on internal combustion engines that are maintained so equipment performs below noise levels specified.
   f. Line hoppers and storage bins with sound deadening material.
   g. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.

3. Measure sound level for noise exposure due to the construction at least once every five successive working days while work is being performed above 55 // ____ // dB(A) noise level. Measure noise exposure at the property line or 15 m (50 feet) from the noise source, whichever is greater. Measure the sound levels on the A weighing network of a General Purpose sound level meter at slow response. To minimize the effect of reflective sound waves at buildings, take measurements at 900 to 1800 mm (three to six feet) in front of any building face. Submit the recorded information to the COR noting any problems and the alternatives for mitigating actions.

G. Restoration of Damaged Property: If any direct or indirect damage is done to public or private property resulting from any act, omission, neglect, or misconduct, the Contractor shall restore the damaged property to a condition equal to that existing before the damage at no additional cost to the Government. Repair, rebuild, or restore property as directed or make good such damage in an acceptable manner.

H. Final Clean-up: On completion of project and after removal of all debris, rubbish, and temporary construction, Contractor shall leave the construction area in a clean condition satisfactory to the COR. Cleaning shall include off the station disposal of all items and materials not required to be salvaged, as well as all debris and rubbish resulting from demolition and new work operations.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Compost Filter Sock:
   1. Bio- or Photo-degradeable mesh.
   2. Fill to be compost, not wood chips, leaves, etc.

B. Silt Fence:
   1. Woven Geotextile fabric.
   2. Height as indicated on Drawings.
   3. Posts: as indicated on Drawings.

C. Geotextile Fabric: Non-biodegradable, non-woven. In accordance with PennDOT Publication 408-Section 735 Geotextiles.
   1. Opening size:
      a. Filter bags: capable of filtering 150 micron particles.
      b. Other applications: Sieve No. 20
   2. Tensile Strength: 200 lbs, ASTM D4632.
   3. Elongation: 15-50 percent, ASTM D4632.
   4. Seam Strength: 180 lbs, ASTM D4632.

D. Rock Construction Entrance

1. Coarse aggregates for rock construction entrances: AASHTO No. 1. Broken concrete not allowed.

E. Pumped Water Filter Bag

2. Non-woven geotextile material sewn with high strength, double stitched "J" type seams, capable of trapping particles larger than 150 microns.

F. Inlet Filters

1. Capable of trapping particles larger than 150 microns.

G. Erosion Control Blankets: As per PennDOT Pub. 408, Sec. 806.2(a)1.

3. North American Green SC-150 or approved equal.

4. Anchorage devices: In accordance with manufacturer’s instructions.

H. Mulch

1. Straw.

PART 3 - EXECUTION

3.01 PROTECTION

A. Take all measures necessary to protect local streams, rivers, and storm sewer systems from erosion and sedimentation during the construction process.

B. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 INLET SEDIMENT FILTERS AND COMPOST FILTER SOCKS

A. Installation in accordance with PADEP Publication 363-213-4-008, manufacturer’s instructions and as indicated on the Drawings.

3.03 SILT FENCE

A. Install at locations indicated on the Drawings. Installation in accordance with PADEP Publication 363-2134-008, manufacturer’s instructions and as indicated on the Drawings.

B. Installation not to precede pipe installation by more than two weeks.

3.04 EROSION CONTROL BLANKETS

A. Install mats in accordance with PADEP Publication 363-2134-008, manufacturer’s instructions and as indicated on the Drawings.

5. Staple patterns in accordance with manufacturer’s instructions and site conditions.

6. Direction of installation:

   a. Slopes and steep channel banks: perpendicular to the slope. Overlap upslope blanket over downslope blanket.

b. Channels: perpendicular to the direction of flow. Overlap upstream blanket over downstream blanket.

3.05 PUMPED WATER FILTER FILTER BAGS

A. Use as needed to dewater excavations.

3.06 SITE STABILIZATION

A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time. Maintain a written log of inspections and maintenance.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. Stockpile and waste pile heights shall not exceed 20 feet. Slope stockpile sides at 2:1 or flatter.

D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.

7. During non-germinating periods, apply mulch at recommended rates.

8. Stabilize disturbed areas which are not at finished grade and which will be disturbed within one year in accordance with Section 329000 with no topsoil.

9. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year in accordance with Section 329000 permanent seeding specifications.

E. At the end of each work week, stabilize disturbed areas with temporary seeding requirements outlined in the Erosion and Sedimentation Control Plan.

10. During non-germination periods, apply mulch at the recommended rates.

11. Stabilize disturbed areas that are either at finished grade or will not be disturbed within one year in accordance with permanent seeding specifications

F. Stabilize diversion channels, sediment traps and stockpiles immediately.

G. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.07 FIELD QUALITY CONTROL

A. Inspect erosion control devices on a daily basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

B. Place sediment in appropriate locations on site; do not remove from site.

3.08 CLEANING

A. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

B. Clean channels when depth of sediment reaches approximately one half channel depth.

C. Do not damage structure or device during cleaning operations.

D. Do not permit sediment to erode into construction or site areas or natural waterways.

E. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Engineer.

F. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

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